

REMARKS

Independent claim 8 and claims 12, 13 and 15 depended therefrom, and independent claim 16, as well as new claims 17-22 are presented for examination.

Rejections Under 35 U.S.C. §103:

Claims 8-16 have been rejected as unpatentable over Dividian et al. '662 in view of Takahashi (JP'288). Applicant respectfully traverses this rejection. Applicant presents subject matter of originally presented claims 14 and 11 combined with independent claim 8 wherein a plate heat exchanger block having housing with a plurality of sheets of one material includes a connection to a header of another material which is not weldable to the first material. In order to weld the header (3) to the housing (2) or to the plurality of sheets, an intermediate piece (5) having a steel part (7) and an aluminum part (6) which have been bonded together by explosive plating, is positioned between the header and housing or sheets to allow the header and plate heat exchanger block to be connected by welding.

In accordance with the present invention, the intermediate member (5) which comprises an aluminum piece (6) and a steel piece (7) are joined by explosive plating the sheets, wherein the sheets are placed on one another and a layer of explosive substance is provided to produce an explosion that brings the metals in the area of the boundary layer between the two metal plates into a plastic state causing the metals to bond in a durable and tight connection.

None of the references provided by the Examiner disclose the explosive plating concept. Note in JP '288 that the steel member and aluminum member are not disclosed as being bonded together by plate explosion but merely disclosed as being "laminated."

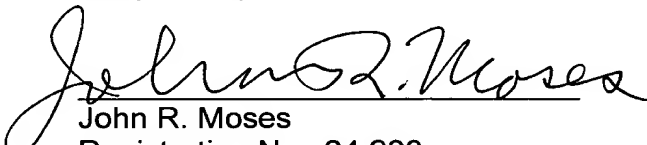
Moreover, only in Figs. 8 and 9 are steel and aluminum members shown bonded, however they are not explosively bonded together, but bonded simultaneously with what appear to be opposed electrodes 6. In any event, there is absolutely no teaching of Applicant's claimed invention which is directed to a plate heat exchanger block and to method of fabricating a heat exchanger.

New claims 17 and 18 depend from claims 8 and 15 and are allowable or the same reasons that claims 8 and 15 are allowable.

New method claims 19-22 distinguishes over the references because independent claim 19, directed to fabricating a heat exchange block, includes among other distinguishing steps the steps of using explosive plating to form the intermediate member and then welding the intermediate member to both the housing and header.

In that this is a full and complete response to the Office Action of February 27, 2002, this application is now in condition for allowance. If the Examiner for any reason feels a personal conference with Applicants' attorneys might expedite prosecution of this application, the Examiner is respectfully requested to telephone the undersigned locally.

Respectfully submitted,


John R. Moses
Registration No. 24,983

Millen, White, Zelano & Branigan
Arlington Courthouse Plaza
2200 Clarendon Blvd.
Suite 1400
Arlington, VA 22201
(703) 812-5309

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Claims:

Please amend the claims as follows:

8. (Amended) A plate heat exchanger block comprising: a housing, at least partly within said housing a plurality of sheets (2) of at least partially corrugated metal arranged parallel to one another, and forming a plurality of heat-exchange passages, at least one header (3) in communication with at least some of the heat-exchange passages, wherein at least two parts (1, 2, 3) of the plate heat exchanger block consist essentially of metallic materials that cannot be welded to one another and wherein the plate heat exchanger block includes an intermediate piece (5) between the header (3) and the heat exchange passages (2) containing the plurality of sheets, the intermediate member having a steel part facing the header and an aluminum part facing the housing, the parts having been bonded together by explosive plating.

15. (Amended) A plate heat exchanger block according to claim 8 44, wherein the sheets (2) consist essentially of aluminum or aluminum alloy and the header (3) consists essentially of steel, wherein the intermediate piece is welded, steel-to-steel, to the header and the intermediate piece is welded, aluminum-to-aluminum, to at least one of (a) the housing and (b) the corrugated sheets.

16. (Amended) A ~~combination of a~~ heat exchange header for attachment to a heat exchanger having aluminum components, the heat exchange header consisting essentially of steel and a connecting piece consisting essentially of steel on one side and consisting essentially of aluminum ~~on~~ explosively bonded to the other side of the steel, said header being welded to the steel side of said connecting piece.